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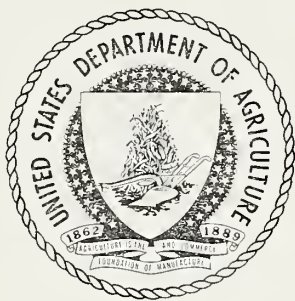
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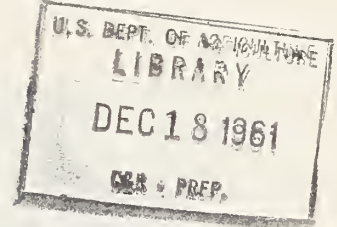
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UNITED STATES DEPARTMENT OF AGRICULTURE  
Economic Research Service  
Washington 25, D. C.



PRELIMINARY RESULTS OF A MARKET TEST OF BULGUR (REDI WHEAT) 1/

Paper presented by Haven D. Umstott, agricultural economist,  
Market Potentials Branch, Marketing Economics Division, at the  
September meeting of the Kansas Wheat Commission, September 7, 1961

It is a privilege and a pleasure to be invited to participate in the activities this week by the Kansas Wheat Commission. It is our pleasure because this occasion allows us to announce publicly for the first time the results of the market test for the test product, canned cooked wheat, market tested as Redi Wheat. These results indicate that the test product possesses commercial possibilities.

Before proceeding with the why, how, and results of our research, a key element contributing to the success of this project needs mentioning. Projects such as these never are accomplished by one person, group, or agency. This particular project exemplifies cooperation of people and agencies at the local, State, and Federal levels. First, we wish to acknowledge the important contribution made by the Kansas State Board of Agriculture, in the persons of Harold A. Ray and W. J. Petr, in obtaining the cooperation of many of the Wichita business people on this project. Your Kansas Association of Wheat Growers provided the funds for the packaging and distribution of the product. The contribution of the Trenton Foods Company, is significant. Their efforts produced for us a high-quality product to market test. Technical consultant for the entire project was the Western Utilization Research and Development Division of the Department - the developer of the test product. Mr. Robert E. Ferrell had the direct responsibility for that phase of the project. The Coffey-Sylvester Company, brokers, made a major contribution in keeping the test product supplied to supermarkets as needed. Last, but by no means least, the key group in getting this project off the ground and keeping it that way, was your own Kansas Wheat Commission, in the persons of Mrs. Pat Talbott, Gerald C. Fowler, and particularly, Walter W. Graber. Many other individuals and groups made important contributions to the success of this market test. We wish to express our grateful appreciation for their assistance and friendly Kansas welcome.

Some of you are wondering why the Department developed a canned cooked wheat product. Let us look at a few reasons with particular attention as to why this product can be important to wheat producers today. Several trends of

1/ The findings presented today are preliminary, since all of the information collected has not yet been analyzed. The data are also subject to revision as they are re-examined and doublechecked for inclusion in the final report.



importance to wheat producers stand out when you examine production, utilization, and consumption statistics of the post-war years. First, the most important factor has been the declining per capita rate of wheat consumption. <sup>2/</sup> With the rising income levels in the past two decades consumers have been able to afford high resource using foods such as meats, frozen fruits and processed vegetables. In addition, higher incomes have accentuated a trend toward convenience foods with which more services are associated.

Anyone faced with the problem of what to do about expanding markets for agricultural products is struck with the obvious fact that greater emphasis must be placed on the development of new products in the food segment of the wheat industry if per person consumption of all wheat is to trend upward again. Thus with post World War II years continued high level of production and the declining per capita rate of wheat consumption, the need for wheat product innovations is obvious.

The per person decline in consumption of wheat flour and cereal in the 10 years 1949-1959 amounted to 12 percent, as pounds per person fell from 139 to 122. The impact of this decline was softened by a population growth of about 19 percent during this same period. Research for new food uses is of particular importance to broaden the utilization base for wheat at home and abroad. The development of new high order-use processed wheat products if commercially acceptable would tend to have a stabilizing influence on prices as new uses for wheat are added to the present wheat food products.

Now, let us talk a little bit about the test product itself. The product has been described as a canned cooked whole kernel wheat that is ready to eat as a side dish or is ready to incorporate as an ingredient in a wide variety of new dishes from a main course to soups and desserts. This food product is a completely new item among modern convenience foods. The Western Utilization Research and Development Division completed research on the process of canning wheat in the spring 1959 and received a patent on the process in the spring of 1960. Research was performed on both a whole kernel product and a cracked kernel product. The market test was conducted on the whole kernel product; however, the cracked kernel product may have a preferred use in certain ingredient uses such as in meatloaf and other recipes where a high degree of ingredient blending is desired.

Redi Wheat has the distinction of being the first wheat in history canned commercially for human food, although the wheat food itself is as old as civilization. In Biblical times the wheat was prepared by parboiling the kernels in an open kettle and spreading it out in the sun to dry. As bulgur it is still a staple of the diet of the people in the Near East and Middle East.

#### Why Market Test?

Market testing is the research tool to determine if a new product has commercial potential. The new product is introduced on a limited market to study sales and consumer use patterns. Experience gained under market test conditions is used to make changes in the product, if weaknesses are discovered,

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<sup>2/</sup> Agricultural Statistics, U. S. Department of Agriculture, 1960, p. 580.

and to develop the test product's strengths in planning a commercial sales program. For commercial firms, the market test provides management with decision-making tools. In some cases the test product is abandoned; in other cases it is sent back to the laboratory for further technical improvements; and, in others, the go-ahead decision is made for commercial introduction.

Cooperative market testing of a U. S. Department of Agriculture developed product has the same objective as market testing by commercial firms. The Department stops with the market test and encourages industry to evaluate the product for commercial sales programs. Hoped for results are that one or more firms will follow through with commercial sales introduction thus expanding the market for agricultural products.

Over half of the items on supermarket shelves today did not exist prior to World War II. Yet the difficulty of achieving a successful new product is reported in a 1955 study of 200 large packaged goods manufacturers. Four out of every five new products introduced after 1945 failed. <sup>3/</sup> One large food manufacturer estimates that it has to invest \$3 to \$5 million in a new product before it begins to make money for the company. <sup>4/</sup> These figures indicate the cost magnitude of new product introduction. However, the cost of developing new products may be greatly reduced through research to help identify a new product success or failure at the market test phase.

#### METHODOLOGY

Now, how did we go about doing the research job? The test was made in Wichita, Kansas, a market of about 345,000 within the metropolitan area. Wichita is quite widely used for test marketing because it is located 173 miles from the nearest large city and limited advertising funds are not in competition with other large city media. Further, Wichita is fairly well diversified in manufacturing, business, and agriculture. Over 35 percent of the labor force is employed in manufacturing.

The market test was conducted in phases beginning in March and is planned to extend through September 1961. During the first phase - a 10-week period - audits were taken weekly in a sample of 39 of Wichita retail food supermarkets. These were selected through random sampling by operating groups. The geographic location is shown in the following slide (figure 1). All supermarkets (79) in the test market, chain and independent, accounting for about 85 percent of the retail food sales in the area, were stocked with the test product.

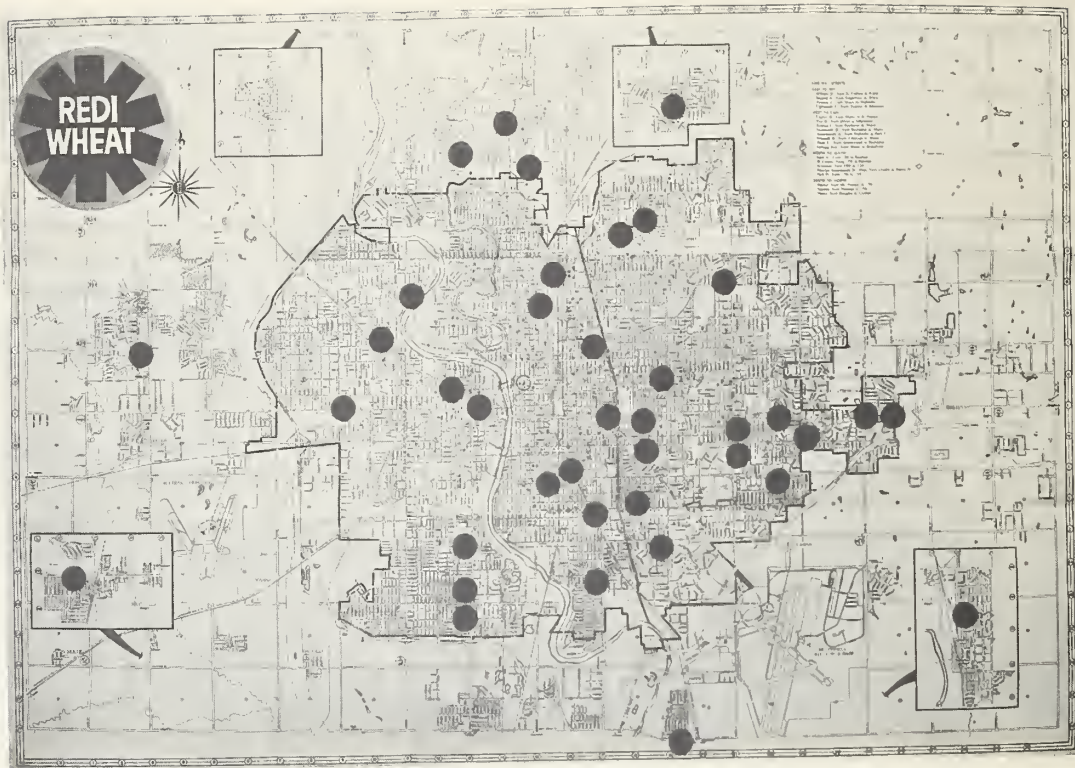
Weekly sales records of the test product and 57 other prepared food products were obtained by a beginning and ending inventory of stocks of these products in audited sample supermarkets, including the quantities purchased and delivered to the stores during each inventory week. These 57 items were enumerated in the pretest week to determine one weeks sales before the Redi Wheat promotion.

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<sup>3/</sup> New Product Introduction. U. S. Small Business Administration. Management Series No. 17 (Washington, D. C. Government Printing Office, 1955) p. 63.

<sup>4/</sup> "New Lines," Business Week, February 22, 1958, p. 106.





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NEG. ERS 512-61 (9) ECONOMIC RESEARCH SERVICE

Figure 1

The 57 products audited consisted of rice items, prepared spaghetti and macaroni dry and canned dinners, ready to eat specialty beans, and dry bulgur. These products were selected in category of uses thought representative for the test product. Generally the stores provided us with two facings for the seasoned Redi Wheat and two facings for the unseasoned Redi Wheat. We suggested the test product be located in the prepared food section of the store.

The second phase of the test extended over a 6-week period during which the number of products audited were reduced to 11. The number of products audited during this second phase was reduced to coincide with food associations indicated by users of the test product as reported in the household survey phase which will be discussed in a latter section of this report.

The third phase of the test began with the 17th week of product introduction and will run through the 31st week. This phase is restricted to obtaining weekly sales for the test product only.

Another important facet of the research was the coordination of the advertising and promotional efforts during the first 4 weeks of the test period. The Kansas Wheat Commission and its advertising agency, The High Plains Advertising Agency, were primarily responsible for carrying out the promotion program. The program consisted of an all-media coverage of the market (which used about 20 percent of the radio and television available media) to accomplish the purpose of bringing the product to the attention of as many households as



possible in as short a time as possible. Television, radio, newspaper, and in-store demonstrations were the key elements in the 4-week campaign. Success of the promotion campaign is demonstrated by about 74 percent of the homemakers in the area being aware that Redi Wheat was being sold in the local stores.

## SALES

### First Phase - A 10-Week Period

Promotion of Redi Wheat began March 2 with all Wichita, Kansas supermarkets and many smaller stores selling the test product. This was a 4-week campaign to be followed by a 6-week period of no promotion.

Although in-store demonstrations always have been regarded as a desirable method of introducing a new product, they seemed particularly effective for the test product. This is graphically illustrated in figure 2, which shows such demonstrations accounting for most of the sales of the test product during the promotion period. The 10 stores in which the in-store demonstrations were located each weekend accounted for 66 percent of the sales during the promotion period. Sales in the 10 demonstration stores averaged 12.4 cases per week as compared with average sales of 2.3 cases during non-demonstration weeks and 1.7 cases average sales for those stores not having demonstration at any time during the promotion period. Some effect of the in-store demonstrations continued as shown in figure 3 as sales during the 6-week non-promotion period averaged higher for those stores conducting demonstrations during the 4-week promotion period as compared with those stores having no in-store demonstrations.

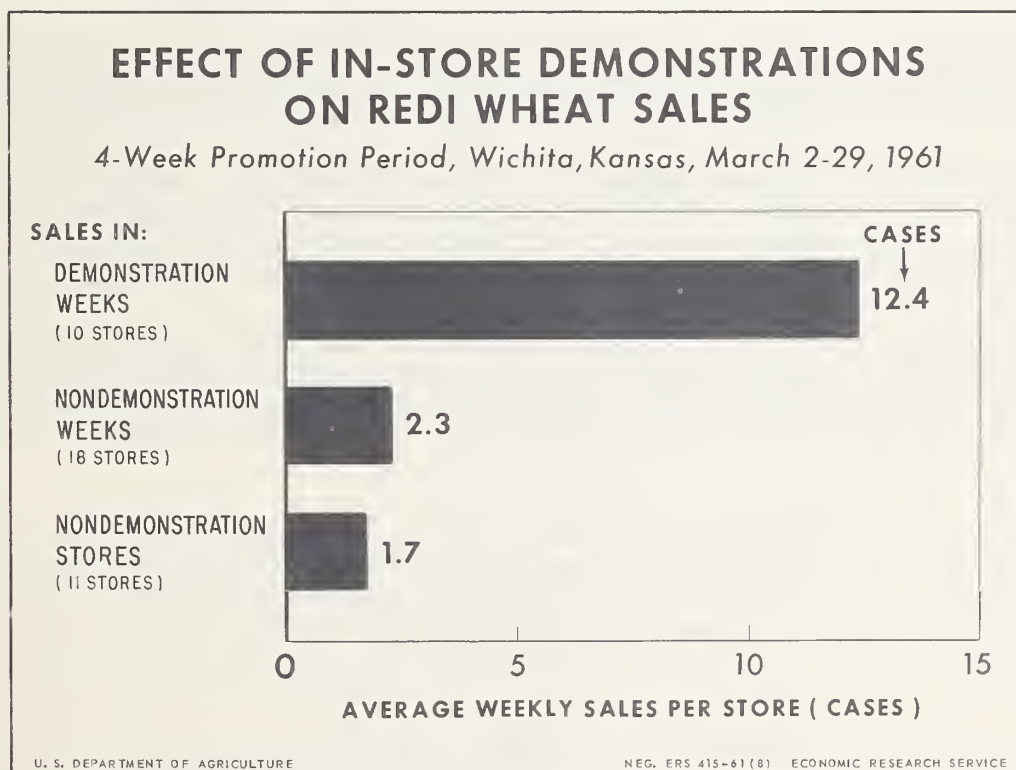


Figure 2

## CARRYOVER EFFECT OF IN-STORE DEMONSTRATIONS ON REDI WHEAT SALES

*6-Week Post-Promotion Period, Wichita, Kansas, Mar. 30-May 10, 1961*

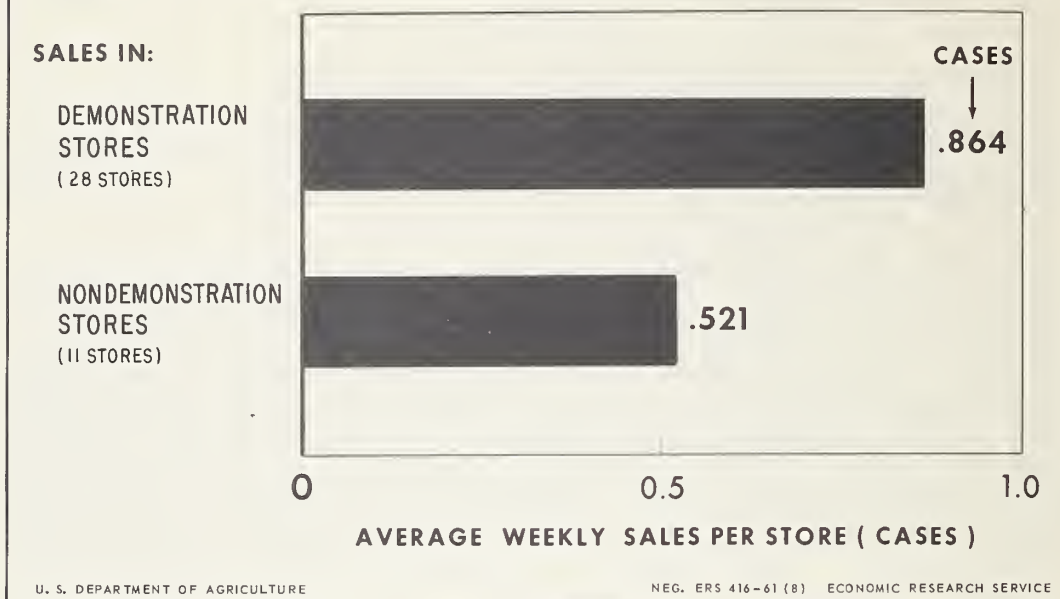


Figure 3

During this four week promotion period 49,000 Redi Wheat Swedish Meat Balls and Redi Wheat Tuna Croquettes were served in 28 of the 39 sample stores to demonstrate the versatility of Redi Wheat in two of the 19 basic recipes.

During the first three weeks of product introduction, sales averaged around 5 cases per store. The fourth week, the week before Easter, sales averaged about  $3\frac{1}{2}$  cases per store. All Redi Wheat promotion ended with the fourth week and the period of no promotion went into effect (table 1).

Sales under conditions of no promotion averaged 1.6 cases per store the first week, 1.1 cases per store the second week, and slightly under  $\frac{3}{4}$  case per store the third week (.72). Sales audited during the three following weeks through May 10 under conditions of no promotion averaged 9 cans per store per week or .38 case.

The average rate of sale for the 57 other products audited during the pre-test week and the 10-week market test period showed that approximately 6 out of 10 products sold less than one-fifth a case per store (.20 case); about 8 out of 10 of the products sold less than two-fifths a case per store (.40 case); and only 2 out of 10 of the products sold two-fifths a case or more per store (table 2).

During the 4-week Redi Wheat promotion period, Redi Wheat ranked first in average unit sales per store compared with the 57 audited products.

Table 1.--Sales of Bulgur (Redi Wheat) in 39 Sample Supermarkets, Wichita,  
Kansas Weeks of March 2 - August 31, 1961

Week Number	Date 1961	Sales Per Week				Average per store per week	
		Seasoned cans	Unseasoned cans	Total cans	Total cases	Cans	Cases
		Number	Number	Number	Number	Number	Number
1.....	3/2-8	2247	2651	4898	204.08	125.6	5.23
2.....	3/9-15	2323	2510	4833	201.37	123.9	5.16
3.....	3/16-22	2036	2616	4652	193.83	119.3	4.97
4.....	3/23-29	1406	1813	3219	134.12	82.5	3.44
5.....	3/30-4/5	708	820	1528	63.67	39.2	1.63
6.....	4/6-12	539	494	1033	43.04	26.5	1.10
7.....	4/13-19	320	350	670	27.92	17.2	.72
8.....	4/20-26	176	203	379	15.79	9.7	.40
9.....	4/27-5/3	168	209	377	15.71	9.7	.40
10.....	5/4-10	144	180	324	13.50	8.3	.35
First Phase							
Average...		1007	1185	2192	91.33	56.2	2.34
11.....	5/11-17	160	175	335	13.96	8.6	.36
12.....	5/18-24	183	231	414	17.25	10.6	.44
13.....	5/25-31	142	183	325	13.54	8.3	.35
14.....	6/1-7	154	185	339	14.13	8.7	.36
15.....	6/8-14	114	124	238	9.92	6.1	.25
16.....	6/15-21	126	198	324	13.50	8.3	.35
Second Phase							
Average...		146	183	329	13.71	8.4	.35
17.....	6/22-28	150	140	290	12.08	7.4	.31
18.....	6/29-7/5	91	119	210	8.75	5.4	.22
19.....	7/6-12	120	144	264	11.00	6.8	.28
20.....	7/13-19	170	119	289	12.00	7.4	.31
21.....	7/20-26	119	99	218	9.08	5.6	.23
22.....	7/27-8/2	102	109	211	8.79	5.4	.23
23.....	8/3-9	80	84	164	6.83	4.3	.18
24.....	8/10-16	80	104	184	7.67	4.8	.20
25.....	8/17-23	100	120	220	9.17	5.6	.24
26.....	8/24-30	87	120	207	8.62	5.3	.22
27.....	8/31-9/6	161	134	295	12.29	7.6	.32
Third Phase							
Average...		115	117	232	10.63	5.9	.27



Table 2.--Rate of Sales Per Week of the 57 Products Audited in 39 Sample Supermarkets, Wichita, Kansas, February 20 - May 10, 1961 and May 11 - June 21, 1961.

Rate of sales per week	February 20 - May 10, 1961 <u>1/</u>		May 11 - June 21, 1961 <u>2/</u>	
	Number of products	Percent of total	Number of products	Percent of total
Less than 1/5th a case .....	34	59.7	5	45.5
1/5th to 2/5th a case .....	10	17.5	5	45.5
2/5th to 3/5th a case .....	6	10.5	0	0
3/5th to 4/5th a case .....	3	5.3	1	9.0
4/5th case and over .....	4	7.0	0	0
Total .....	57	100.0	11	100.0

1/ Sales of the test product averaged 2.34 cases per store during this introductory period which included the 4-weeks of promotion.

2/ Sales of the test product averaged .35 case per store during the 11th through the 16th week of product introduction.

During the following 6-week period of no promotion for the test product, Redi Wheat ranked fourth in average unit sales per store out of the 57 items. A dry macaroni and cheese dinner product and two brands of canned spaghetti prepared in tomato sauce with cheese outsold the Redi Wheat during this period.

Regular promotions which would tend to increase sales were observed for items in the audited product classes during this 6-week period of no promotion for Redi Wheat. The largest number of in-store promotions during this 6-week period was observed for a canned spaghetti item conducted in 35 of the 39 audit stores.

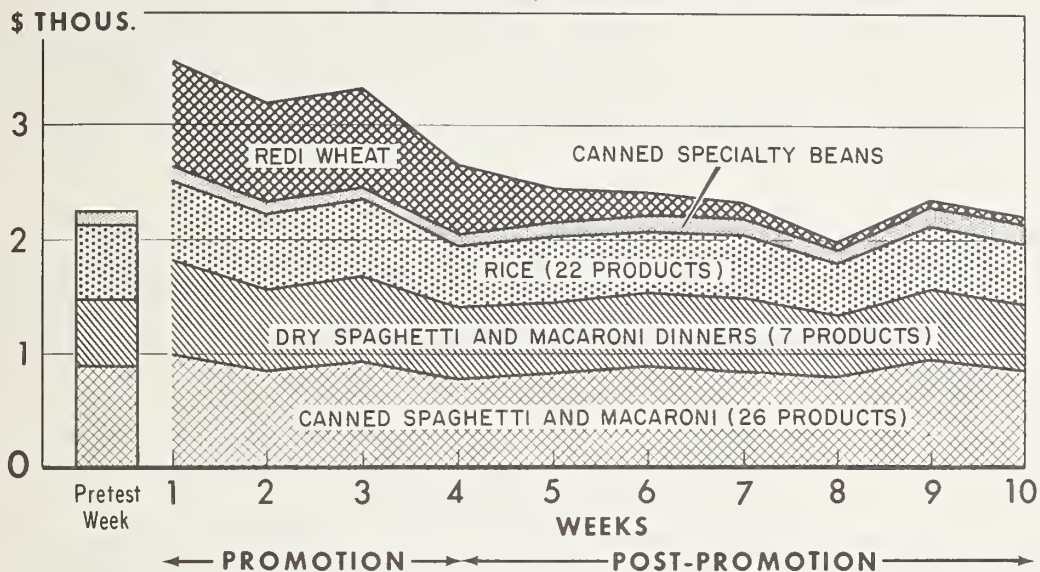
Sales of the 57 audited items remained fairly constant from the pretest week to the 11th week. The percentage change was less than 1 percent. Purchases of the test product for the most part appears to be in addition to the purchases shoppers made for the audited items (figure 4).

#### Second Phase - A 6-Week Period

Beginning with the eleventh week of the test product introduction, a 3-week follow-up promotion for Redi Wheat (May 11-31) was scheduled. This 3-week promotion excluded the in-store demonstration of the product, relying upon special display and limited newspaper, radio and television advertising. Weekly sales of Redi Wheat during this period of limited promotion averaged .38 case per store. For the next 3-week period, weekly sales of Redi Wheat averaged .32 case per store. For the 6-week period, weekly sales of the test product averaged .35 case per store.

# DOLLAR SALES OF REDI WHEAT AND 57 ALTERNATE PRODUCTS

*Pretest, Promotion, and Post-Promotion Periods, Wichita, Kansas,  
Feb. 20-May 10, 1961*



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NEG. ERS 414-61 (8) ECONOMIC RESEARCH SERVICE

Figure 4

During the second phase, the categories of dry and prepared spaghetti and macaroni dinners were no longer enumerated. These products were dropped because users did not consider the test product as an alternate use product for such food items. Eleven products remained for enumeration along with the test product. Of these 11 products 45 percent sold less than one-fifth a case per store during the May 11 - June 21, 1961 period and 91 percent sold less than two-fifths of a case per store. The test product sold better than 8 out of 10 of the 11 audited products during this period (table 2). The 11 food items fall into categories of rice, canned specialty beans, and bulgur.

## Third Phase - A 15-Week Period

The third phase of the test began with the 17th week of product introduction and is planned to extend through the 31st week. This phase is restricted to obtaining weekly sales for the test product only. As of this date sales audit data are available for eleven weeks. During this 11-week period sales of the test product averaged .27 case per store per week (table 1). The test product at this level of sales ranks better than 6 out of 10 of the 57 items audited during the first phase (table 2).



## Sales Concept in One-Stop Shopping

A new product is in competition with some 4 to 6 thousand other items normally carried in modern supermarkets. As supermarket managers encourage the trend to one-stop shopping, many of the items carried will reflect a low rate of sales per week. Whether a new product is to keep its place on the shelves must be determined under the one-stop merchandising concept on the basis of sales velocity in relation to similar items more than on sheer velocity of sales. 5/ If Redi Wheat is viewed in this setting and if it were promoted on a level comparable to other convenience foods, it might achieve a sales rate which would compare favorably to the sales rate for many other prepared food products offered by supermarkets.

In the final analysis, it is the consumer who writes the history of a new product. Apparently, shoppers liked the flavor of the product when they tasted the Redi Wheat Swedish Meat Balls or Redi Wheat Tuna Croquettes. This is reflected in the sales results of those stores conducting in-store demonstrations. But, let's look at the results of the household survey to find out what consumers said.

## Household Survey Results 6/

About three weeks after the completion of the various promotional activities which introduced Redi Wheat, we began interviewing homemakers in Wichita. We wanted to find out whether they had used Redi Wheat, and if they had, what they thought of it.

A systematic sample of every 30th household in the Wichita area was drawn from the Wichita telephone directory. Local interviewers were hired and trained to talk with these 2700 households by telephone. We wanted to determine whether or not homemakers were aware that Redi Wheat was being offered for sale in Wichita; and if they were, whether or not they had purchased the test product. If they were aware of the product but had not bought it, they were asked a few questions by phone. If they had actually purchased it, they were visited in their homes to be interviewed. All of the field work was conducted during April 1961 for this initial household survey.

As to results, we found that among all the homemakers in the basic sample, 74 percent were aware that the new product was being sold in local food stores. Among all homemakers in the basic sample, 18 percent had purchased one or more cans of the test product.

When the purchasers were asked what had induced them to buy, over half said that they were curious and wanted to try it. About a fourth reported that the appeal was based on their liking for wheat or that they liked the taste of the sample that they had been given in the store.

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5/ Progressive Grocer. The Dillon Study, p. D18, May 1960.

6/ The Household Survey was conducted under the direction of Dan S. Hollon, social science analyst, Special Surveys Branch, Standards and Research Division, Statistical Reporting Service, U. S. Department of Agriculture.



Of the purchasers, 22 percent had purchased more than once. Of those who had purchased Redi Wheat only once, a fifth reported that they had not as yet used it. Those who made repeat purchases were apt to state that they liked the taste, or liked it in certain recipes, as reasons for buying again. Those who did not buy more than once gave as reasons that they still had some on hand, they used it at certain intervals only, or that the family did not like it.

As sales started to settle down the question was raised about these later buyers. Were they new purchasers or were they repeat purchases made by users who came into the market during earlier promotion? To answer this question a follow-up interview was made during June, almost two months after the initial household survey. A small subsample of the original household sample was re-interviewed by telephone to determine the number of times they had purchased to date.

The results of the follow-up indicate a gain of about 5 percent over the 18 percent initial buyers of the product in the original survey. Thus the cumulative total of all households who bought at least once was 23 percent.

The follow-up study also indicates that 9 percent of all homemakers purchased during the period between the two surveys. About half of these had purchased in the early phase. This means that repeat buyers constituted half of the total purchases of the product during this period; or, in other words, about 5 percent of the households in the Wichita metropolitan area.

#### SUMMARY

Now, what do all these facts and figures add up to? First, we must emphasize that the final returns on the commercial feasibility of Redi Wheat are not yet in. We must remember that the product was tested in only one market and for a relatively short period of time. Some purchasers had difficulty with the recipes developed on the laboratory product. The can label suffered when a last minute change in can size was required to withstand the high vacuum. A realistic appraisal of the commercial prospects of the product must take this into account. Interested groups should replicate the test in several other markets to achieve more definite results. However, we do feel that the research methods used in this study (that is, the weekly sales audits which allow us to compare with precision the sales rate of a new product with that of well-established products, and the follow-up consumer survey) enable us to do a reasonably accurate job of reporting the potential of the product tested.

So, to sum up, we think this new wheat food has some real pluses. It is a product of excellent wholesomeness with some new convenience features, and it appears to be considered a good food buy on a cost and price basis with other prepared foods. Although we have not as yet achieved a sustained rate of sales as high as hoped for, Redi Wheat outsold many established prepared foods, both during and after the promotion period.

